



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Alan R. Reinberg

Serial No.: 09/189,098

Filed: November 9, 1998

For: WEAK THERMAL/ELETRICAL
LINK FOR VERTICALLY CONTACTED
STRUCTURES

Confirmation No.: 5116

Examiner: H. Weiss

Group Art Unit: 2814

Attorney Docket No.: 2269-3528US

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REPLY BRIEF

Mail Stop Appeal Brief
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attn: Board of Patent Appeals and Interferences

Sir:

This Reply Brief is being submitted in TRIPLICATE pursuant to 37 C.F.R. § 1.192(a) in the format required by 37 C.F.R. § 1.192(c) and with the fee required by 37 C.F.R. § 1.17(c).

This Reply Brief is being submitted within two months of the December 17, 2003, mailing date of an Examiner's Answer in the above-referenced application.

(8) ARGUMENT

The Examiner's Answer asserts that one of ordinary skill in the art would have been motivated to combine the teachings of Brown and Buiguez in such a way as to render the subject matter recited in claims 1-6, 8-10, 32-38, and 68-70 unpatentable.

The Examiner's Answer does not address the issue that Buiguez and Brown both fail to provide any suggestion or motivation to one of ordinary skill in the art that the silicon-containing polymer of Buiguez may be used for anything other than as a photomask. Further, Buiguez does not include any teaching or suggestion that the silicon-containing polymers described therein may remain within semiconductor devices. Rather, as is well-known in the art, photomasks are typically removed from semiconductor device structures and, therefore, would not ordinarily remain in place over a structure which is contacted by a contact.

Moreover, although the Examiner's Answer includes a broad statement that "there are a number of sub-classes (e.g. 438/628, 654) in the patent system devoted to patents promoting adhesion of dielectric and metal layers" (Examiner's Answer, page 7), the Examiner's Answer does not provide any specific support to counter Appellant's point that one of ordinary skill in the art would not have been motivated to use a silicon-containing photosensitive polymer (photomask material), such as that taught in Buiguez, adjacent to a copper contact, such as that taught in Brown. No references have been cited which show that, before the filing date of the above-referenced application, one of ordinary skill in the art would have been motivated to use copper against a silicon-containing polymer.

Further, the Examiner's Answer raises an additional issue as to whether or not one of ordinary skill in the art would have been motivated to combine the teachings of Brown and

Buiguez in the manner that has been asserted. Specifically, would one of ordinary skill in the art have had any reason to expect the copper of the contact of Brown to adhere to the silicon-containing polymer of Buiguez. As Buiguez does not provide one of ordinary skill in the art with any reason to believe that it would be possible to fabricate a copper structure or any other electrically conductive structure on the silicon-containing polymer, and since no other art has presented that would suggest the same, it is respectfully submitted that the Examiner has not set forth adequate reasoning to support its assertion that one of ordinary skill in the art would have been motivated to combine the teachings of Brown with those of Buiguez.

With respect to claim 10, Brown and Buiguez both lack any teaching or suggestion of a device which includes “a phase change component in electrical communication with [a] contact . . .”

For these reasons, as well as those that are already of record in the above-referenced application, the Office has not established a *prima facie* case of obviousness against any of claims 1-6, 8-10, 32-38, and 68-70. Therefore, under 35 U.S.C. § 103(a), each of claims 1-6, 8-10, 32-38, and 68-70 recites subject matter which is allowable over that taught in Brown and Buiguez.

Accordingly, reversal of the 35 U.S.C. § 103(a) rejections of claims 1-6, 8-10, 32-38, and 68-70 is respectfully requested.

Claim 11 is allowable for depending from claim 1 and, further, because Whitten does not remedy the aforementioned deficiencies of Brown and Buiguez. Therefore, reversal of the 35 U.S.C. § 103(a) rejection of claim 11 is also respectfully requested.

Ovshinski, Brown, and Buiguez

The Examiner's Answer also asserts that one of ordinary skill in the art would have been motivated to combine the teachings of Ovshinsky, Brown, and Buiguez, thereby rendering claims 7, 12-19, 35-54, 56-66, and 71 unpatentable.

The purported motivation is "to reduce costs, promote high throughput and shorten cycle times" and a fanciful statement in Brown to the effect that "their invention could be adapted to other applications by one of ordinary skill in the art (Column 8[, sic] Lines 58 to 60)." Examiner's Answer, page 9. These "motivations" are practically ubiquitous in semiconductor device-related technologies, and in no way provide one of ordinary skill in the art with any specific reason to combine the contact of Brown with the semiconductor device elements of Ovshinsky.

In reality, Brown does not provide one of ordinary skill in the art with any motivation to use the contact described therein adjacent a memory cell or any other structure that resembles the memory cells of Ovshinsky. Ovshinsky also lacks any teaching or suggestion that would have motivated one of ordinary skill in the art to use a thermally insulative contact over the phase change elements of the EEPROM disclosed therein.

In view of the foregoing, and the additional reasoning that has been set forth in the Appeal Brief in the above-referenced application, it is respectfully submitted that a *prima facie* case of obviousness has not been established against any of claims 7, 12-19, 35-54, 56-66, and 71. Therefore, under 35 U.S.C. § 103(a), each of claims 7, 12-19, 35-54, 56-66, and 71 recites subject matter which is allowable over that taught in Ovshinsky, Brown and Buiguez.

Accordingly, it is respectfully requested that the 35 U.S.C. § 103(a) rejections of claims 7, 12-19, 35-54, 56-66, and 71 be reversed.

For these same reasons, as well as the additional reasoning that has been provided in the Appeal Brief, it is respectfully submitted that the teachings of Ovshinsky, Brown, Buiguez, and Whitten cannot be combined in such a way as to establish a *prima facie* case of obviousness against any of claims 20, 55, or 67. It is, therefore, respectfully submitted that, under 35 U.S.C. § 103(a), each of claims 20, 55, and 67 is directed to subject matter which is patentable over that taught in Ovshinsky, Brown, Buiguez, and Whitten.

Accordingly, reversal of the 35 U.S.C. § 103(a) rejections of claims 20, 55, and 67 is respectfully requested.

10. CONCLUSION

It is respectfully submitted that, under 35 U.S.C. § 103(a):

(A) Claims 1-6, 8-10, 32-38, and 68-70 are nonobvious and, thus, allowable over the combination of teachings from Brown, in view of the teachings of Buiguez;

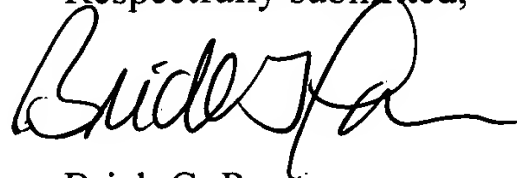
(B) Claim 11 is nonobvious and, thus, allowable over the teachings of Brown, in view of the teachings of Buiguez and, further, in view of teachings from Whitten;

(C) Claims 7, 12-19, 39-54, 56-66, 69, and 71 are nonobvious and, thus, allowable over the teachings of Ovshinsky, in view of the teachings of Brown and Buiguez; and

(D) Claims 20, 55, and 67 are nonobvious and, thus, allowable over the combined teachings of Ovshinsky, Brown, Buiguez, and Whitten.

It is, therefore, respectfully requested that the 35 U.S.C. § 103(a) rejections of claims 1-20 and 32-71 be reversed and that each of these claims be allowed.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Brick G. Power", written over the typed name.

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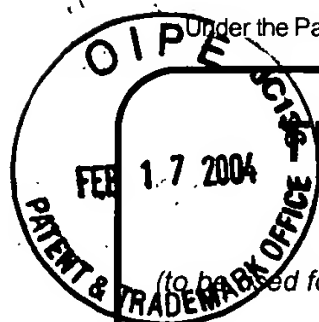
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(to be used for all correspondence after initial filing)

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First Named Inventor	Alan R. Reinberg
Group Art Unit	2814
Examiner Name	H. Weiss
Attorney Docket Number	2269-3528US (97-1099.00/US)

ENCLOSURES (check all that apply)

- ☒ Postcard receipt acknowledgment (attached to the front of this transmittal)
- ☒ Duplicate copy of this transmittal sheet in the event that additional filing fees are required under 37 C.F.R. § 1.16
- ☐ Preliminary Amendment
- ☐ Response to Restriction Requirement/Election of Species Requirement dated
- ☐ Amendment in response to office action dated
- ☐ Amendment under 37 C.F.R. § 1.116 in response to final office action dated
- ☐ Additional claims fee - Check No. in the amount of \$
- ☐ Letter to Chief Draftsman and copy of FIGS. with changes made in red
- ☐ Transmittal of Formal Drawings
- ☐ Formal Drawings (sheets)

- ☐ Information Disclosure Statement, PTO/SB/08A (08-00); ☐ copy of cited references
- ☐ Supplemental Information Disclosure Statement; PTO/SB/08A (08-00); copy of cited references and Check No. in the amount of \$180.00
- ☐ Associate Power of Attorney
- ☐ Petition for Extension of Time and Check No. in the amount of \$
- ☒ Reply Brief
- ☐ Fee Transmittal Form
- ☐ Certified Copy of Priority Document(s)
- ☐ Assignment Papers (for an Application)

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Remarks

The Commissioner is authorized to charge any additional fees required but not submitted with any document or request requiring fee payment under 37 C.F.R. §§ 1.16 and 1.17 to Deposit Account 20-1469 during pendency of this application.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENTFirm or
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Date

February 17, 2004

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